

WHAT IS CLAIMED IS:

1. A system for intraluminally delivering a an endovascular device in a corporeal lumen, the system comprising:

a main catheter housing the endovascular device, the main catheter configured as a hollow tube; and

5 a balloon catheter having an elongate shaft, an expandable member and a pliable or collapsible jacket guard, the expandable member is attached to a distal portion of the balloon catheter shaft, the jacket guard is attached to the balloon catheter shaft slightly proximal to the expandable member;

10 whereby the endovascular device, and the balloon catheter are housed within the main catheter for intraluminal delivery of the endovascular graft.

2. The system of claim 1, further comprising:

a bifurcated graft formed of a superior member having a graft bifurcation and extending into an ipsilateral member and a contralateral member;

a set of positioning mechanisms capable of intraluminally positioning the bifurcated graft into the corporeal lumen; and

a set of attaching mechanisms capable of attaching the superior member to the superior vessel, the ipsilateral member to the ipsilateral vessel, and the contralateral member to the contralateral vessel;

wherein the set of positioning mechanisms and the set of attaching mechanisms define an inner diameter measuring less than seven millimeters and the set of positioning mechanisms and the set of attaching mechanisms are housed within the main catheter.

3. The system of claim 1, the jacket guard comprising a pliable material and having a first end and a second end.

4. The system of claim 3, wherein the jacket guard first end is affixed to the elongate shaft of the balloon catheter at a location slightly proximal to the expandable member.
5. The system of claim 4, wherein the jacket guard first end is affixed by gluing.
6. The system of claim 4, wherein the jacket guard first end is affixed by welding.
7. The system of claim 3, wherein the jacket guard second end is attached to a ring member, the ring member being slidably disposed about the elongate shaft of the balloon catheter such that the pliable jacket guard second end may be translated about a longitudinal axis of the elongate shaft.
8. The system of claim 3, wherein the pliable jacket guard includes a first compressed profile and a second expanded profile.
9. The system of claim 8, wherein the second expanded profile is larger than a circumferential profile of the main catheter.
10. The system of claim 9, wherein the jacket guard forms an overlap when urged against a superior end of the main catheter.
11. The system of claim 1, wherein the expandable member is configured as a jacket guard.

12. The system of claim 11, the expandable member further including an inferior end, the expandable member inferior end being connected to the elongate shaft of the balloon catheter in an inverted fashion.

13. The system of claim 12, wherein the expandable member forms an overlap when urged against a superior end of the main catheter.

14. The system of claim 1, the set of attaching mechanisms further comprising an expandable anchor attached to the superior member of the bifurcated graft, the expandable anchor being self expanding.

15. The system of claim 14, wherein the expandable anchor includes vessel engaging members.

16. The system of claim 15, wherein the vessel engaging members are hooks or barbs.

17. The system of claim 1, wherein the set of attaching mechanisms includes a first expandable anchor attached to the superior member of the bifurcated graft and a second expandable anchor attached to the ipsilateral member of the bifurcated graft.

18. The system of claim 1, wherein the set of attaching mechanisms includes a first expandable anchor attached to the superior member of the bifurcated graft, a second expandable anchor attached to the ipsilateral member of the bifurcated graft and a third expandable anchor attached to the contralateral member of the bifurcated graft.

19. The system of claim 1, the set of positioning mechanisms further includes a main guidewire.

TO BE RELEASED

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26. The system of claim 25, wherein the delivery catheter engages the jacket guard inferior end thereby forming an overlap.

27. A method for repairing a bifurcated vascular vessel formed by an upstream vessel a first downstream vessel and a second downstream vessel using a bifurcated graft delivery system having a delivery catheter with a terminal end and a balloon catheter having an expandable member and a jacket guard, a bifurcated graft
5 formed by an upstream duct, a first downstream duct and a second downstream duct, comprising the steps of:

loading the bifurcated graft into the delivery system;

configuring the jacket guard in relation to the terminal end of the delivery catheter to provide an atraumatic profile;

10 inserting the bifurcated graft delivery system intraluminally into the bifurcated vascular vessel;

withdrawing the delivery catheter such that the bifurcated graft is exposed within the bifurcated vascular vessel;

15 positioning the bifurcated graft within the bifurcated vascular vessel, such that the upstream duct extends into the upstream vessel, the first downstream duct extends into the first downstream vessel, and the second downstream duct extends into the second downstream vessel;

anchoring the first downstream duct to the first downstream vessel;

anchoring the second downstream duct to the second downstream vessel;

20 anchoring the upstream duct to the upstream vessel; and

retracting the delivery system from the vascular vessel.